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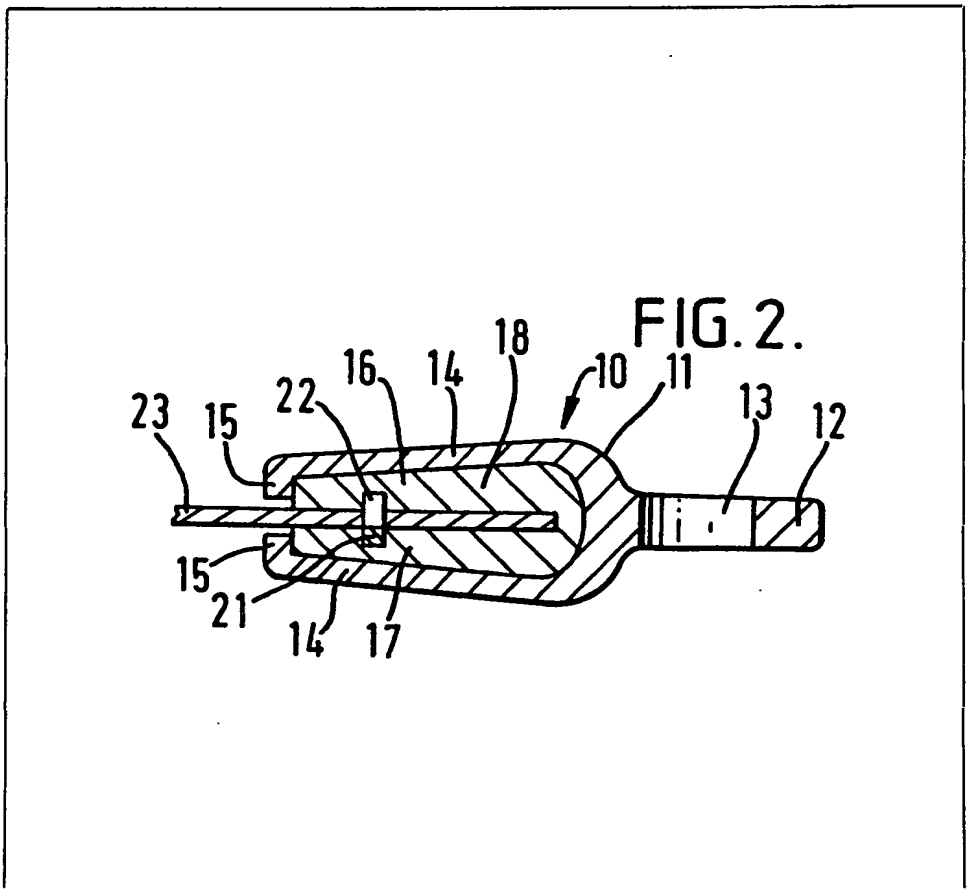
(71) Applicant
Makefast Limited
(Great Britain)
Coal Park Lane
Swanwick
Southampton
Hampshire SO3 7DL
(72) Inventor
Thomas William Brown
(74) Agent and/or Address for Service
D Young and Co
10 Staple Inn
London WC1V 7RD

(54) A device for clamping to a sheet of flexible material

A device, such as a sail clew, which can be fixed to a sheet or piece of flexible material 23, comprising an outer member 11 having an end portion 12 provided with a hole or holes 13 or with a recess for receiving the member to be connected to the sheet material 23 and having opposed limb portions 14 between which is received a clamping member 16 having a portion 17 and a portion 18, at least one of the portions 17, 18 being provided with a toothed strip 21 which when the limb portions 14 are forced towards each other penetrate through the sheet material 23 and into the opposed portion 18.



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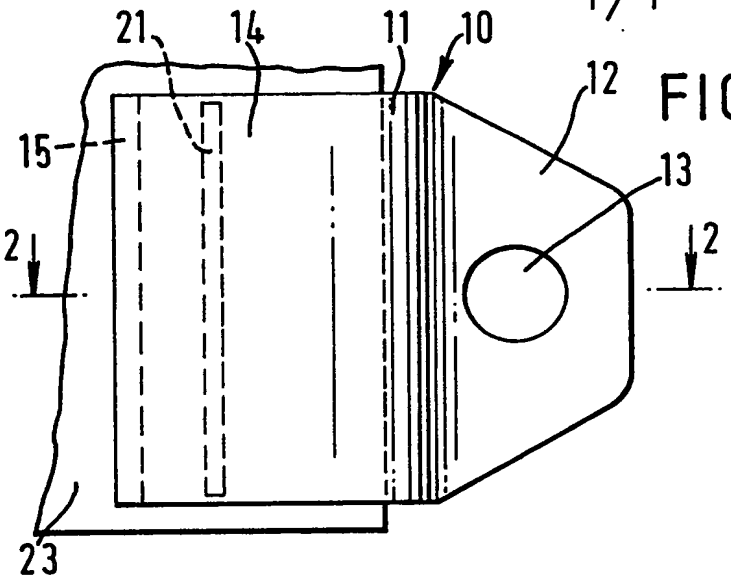

FIG. 1.

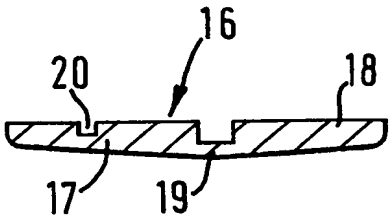

FIG. 4.

FIG. 2.

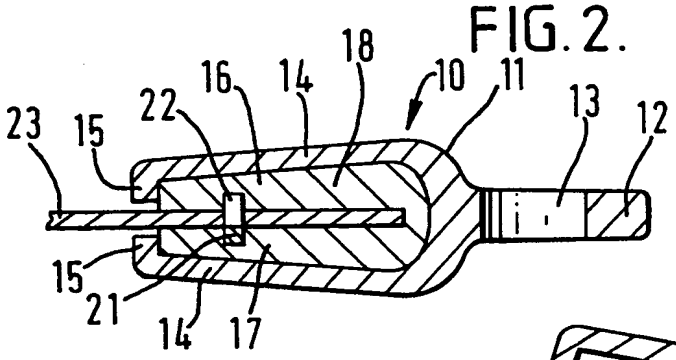

FIG. 5.

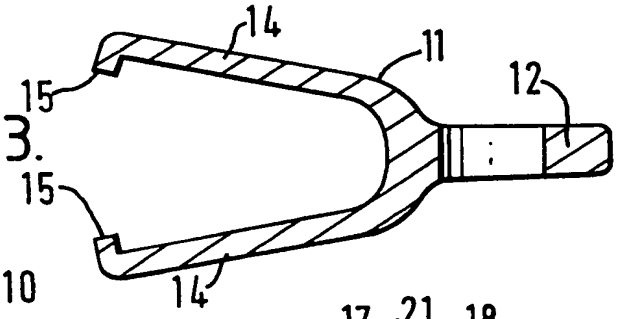

FIG. 3.

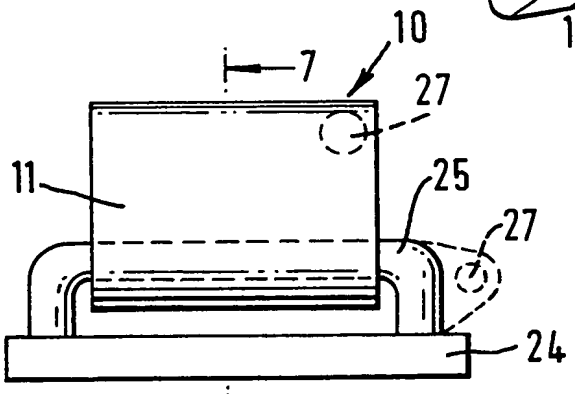

FIG. 6.

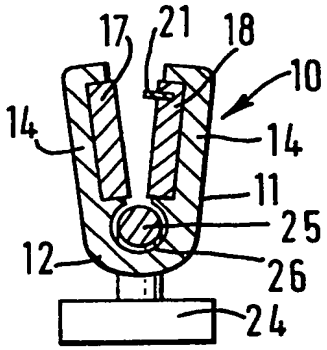

FIG. 7.

SPECIFICATION

A device for clamping to a sheet of flexible material

This invention relates to a device which can be fixed to a sheet or piece of flexible material to enable a member to be connected to the sheet or piece. Such flexible material may comprise a sail cloth, parachute material, tent material, webbing, tarpaulins, etc.

The device may comprise a sail clew. A sail clew is a member having an eyelet provided on the bottom corner of a sail remote from the mast and used for adjusting the tension of the bottom edge of the sail so that the bottom edge of the sail is either held taught or allowed to bow.

According to the present invention there is provided a device which can be fixed to a sheet or piece of flexible material to enable a member to be connected to the sheet or piece, comprising an outer member having a portion provided with a transverse hole or holes or a recess for receiving the members to be connected to the sheet or piece, a pair of opposed limb portions extending from one end of said portion, an inner clamping member received between said limb portions, said inner clamping member comprising a first portion or member disposed on the inner side of one limb portion and a second portion or member disposed on the inner side of the other limb portion and arranged to receive the sheet or piece of material therebetween, at least one of said portions or members being provided with teeth which penetrate through the material and into the other of said portions or members when the opposed limb portions are forced towards each other to cause the portions or members of the inner clamping member to clamp the sheet or piece of material.

Some embodiments of the invention will now be described, by way of examples, with reference to the accompanying drawings, in which:–

Figure 1 is a side elevation of a device according to the present invention and constituting a sail clew,

Figure 2 is a transverse section taken along the line 2–2 of Fig. 1,

Figure 3 is a transverse section through the outer member of the device before assembly,

Figure 4 is a transverse section through the inner member before assembly,

Figure 5 is a side elevation of the toothed strip,

Figure 6 is a side elevation of a device according to the present invention for fixing a slider to a sail, and

Figure 7 is a section taken along the line 7–7 of Fig. 6.

The device 10, which is in the form of a sail clew, comprises an outer member 11 which is formed of any suitable material which can be extruded, such as an aluminium alloy or stainless steel alloy. The outer member 11 comprises a portion 12 which is provided with one or more holes 13 depending upon its length. Extending from one edge of the portion 12 are two opposed limb portions 14 provided at their outer ends with an inwardly directed flange 15. The outer member 11 is formed from an extruded strip which is cut to the required length and the limb portions of the strip diverge away from the portion 12.

Provided between the limb portions 14 is an inner clamping member 16 which is preferably formed of extruded material of the type sold under the registered Trade Mark "Nylon". The clamping member 16 comprises two portions 17 and 18 which are joined together by a web portion 19, the portion 17 being provided with a channel 20 in which is received a metal strip 21 preferably formed of stainless steel having along an outer edge a plurality of teeth 22.

In order to assemble and fix the device 10 to a sail 23 the strip 21 is inserted in the channel 20 of the member 16 with the teeth 22 directed away from the channel 20 and the strip 21 is bent about the web portion 19 and inserted between the limb portions 14 of the outer member 11. The assembly is the placed onto the sail 23 with the sail 23 received between the portions 17 and 18 and the limb portions 14 are pressed towards each other to the position shown in Fig. 2 so that the portions 17 and 18 clamp the sail 23 therebetween and the teeth 22 penetrate through the sail 23 and into the portion 18. The flanges 15 engage one end of the portions 17 and 18.

It will be appreciated that each of the portions 17 and 18 can be provided with a toothed strip 21 and that each can be provided with more than one toothed strip.

It will also be appreciated that the portions 17 and 18 can be separate from each other instead of being joined together by web portion 19.

When the limb portions 14 have been pressed together they preferably converge towards each other in a direction towards their outer edges. The resultant fastening to the sail 23 is secure and due to the length of the clew 10 the region of the sail to which the clew 10 is fastened does not distort when a pulling force is applied to the clew 10 to tension the bottom of the sail 23.

Alternatively, the inner clamping member 16 may be formed of a soft metal, such as copper.

When the portions 17 and 18 are separate pieces, each may be received in a suitably shaped recess provided in the inner face of each limb portion 14. Such recesses may be of dovetail configuration.

The device 10 may be used with sail cloth, parachute material, tent material, webbing or tarpaulins etc, and enables a member such as a rope to be connected to the material.

As shown in Figs. 6 and 7 the device 10 can be used for fixing a slider 24 to a sail, the slider 24 having a portion 25 which is received in a circular recess 26 provided in the portion 12 of member 11. The portion 25 can be provided with a shackle hole 27 or alternatively the hole 27 can be provided in the member 10. In this embodiment the portion 12 of the member 11 is not provided with a transverse hole or holes.

CLAIMS

1. A device which can be fixed to a sheet or piece of flexible material to enable a member to be connected to the sheet or piece, comprising an outer member having an end portion provided with a transverse hole or holes or with a recess for receiving the member to be connected to the sheet or piece, a pair of opposed limb portions extending from said end portion, an inner clamping member received between said limb portions, said inner clamping member comprising a first portion or member disposed on the inner side of one limb portion and a second portion or member disposed on the inner side of the other limb portion and arranged to receive the sheet or piece of material therebetween, at least one of said portions or members of the clamping member being provided with teeth which penetrate through the flexible material and into the other of said portions or members of the clamping member when the opposed limb portions are forced towards each other to cause the portions or members of the inner clamping member to clamp the sheet or piece of material therebetween.

2. A device as disclosed in claim 1, in which the inner clamping member comprises two portions joined together by a web portion.

3. A device as claimed in claim 1, in which the inner clamping member comprises two separate portions each received in a recess provided on the inner face of each limb portion.

4. A device as claimed in any preceeding claim, in which the teeth are provided on a metal strip received in a channel provided on at least one of said clamping member portions.

5. A device as claimed in any preceeding claim, in which the inner clamping member is formed of a plastics material or soft metal.

6. A device as claimed in any preceeding claim, in which the outer member is formed from an extruded strip which is cut to the required length.

7. A device as claimed in any preceeding claim, comprising a sail clew.

8. A device which can be fixed to a sheet or piece of flexible material to enable a member to be connected to the sheet or piece of material, substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

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